

Curriculum Vitae of Jun Huang

Current positions

- 02/2023 Junior professor
Faculty of Georesources and Materials Engineering, RWTH Aachen University, Germany
- 05/2022 Helmholtz Young Investigators Group leader
IEK-13, Forschungszentrum Jülich, Germany

Research

- Vision *Operando* modelling of reactive electrochemical interfaces
- Mission Contributing to fundamental understanding of interfacial electrochemistry by developing new theoretical concepts and methods
- Approach We are developing **density-potential functional theoretic** methods for reactive electrochemical interfaces, including,
orbital-free description of equilibrium thermodynamics
minimal orbital-based description of charge transfer
linear response theory, localized surface plasmonic resonance
quantum dynamics of open systems
software development

Previous positions

- 2020-2022 Humboldt postdoctoral fellow
Institute of Theoretical Chemistry, Ulm University, Germany
- 2017-2020 Associate professor
College of Chemistry and Chemical Engineering, Central South University, China

Visiting positions

- 2024 (*Cancelled due to visa rejection*) Visiting Professor for three months, Northeastern University, Boston
Host: Prof. Juner Zhu
- 2021 Research Stay in Alicante University, Spain
Funded by Humboldt Foundation
Host: Prof. Victor Climent, Prof. Juan Feliu
- 2015-2016 Research Stay in Simon Fraser University, Canada
Funded by China Scholarship Council
Host: Prof. Michael Eikerling

Education

- 06/2017 PhD
Department of Automotive Engineering, Tsinghua University, China
Prof. Dr. Jianbo Zhang
- 06/2012 Bachelor
Department of Automotive Engineering, Tsinghua University, China

Funding and awards

- 2024 ERC Starting Grant
For five years with a total of at least 1.5 million euros, investigating overlapping electrical double layers at supported nanoparticles.

- 2023 Top Cited Paper Award, IOP Publishing
for the paper entitled "Impedance Response of Porous Electrodes: Theoretical Framework, Physical Models and Applications."
- 2023 Outstanding Contribution Award for Young Editorial Board Members, Journal of Electrochemistry, Chinese Society of Electrochemistry
- 2021 Helmholtz Young Investigators Group Leader
Funding to establish an independent research group for five years with a total of at least 1.5 million euros.
- 2020 Humboldt Research Fellowship
This fellowship brought me to Germany during the pandemic and granted me the opportunity to develop a unique hierarchical modelling framework for electrocatalytic reactions.
- 2017 Rising Stars in Academia (学术新秀), Tsinghua University, China
This award is conferred on ten individuals out of > 6000 graduate students in Tsinghua University for their excellence in research.
- 2017 Outstanding doctoral thesis, Tsinghua University, China
for my dissertation entitled "Electrostatic Effects in the Catalyst Layer of Polymer Electrolyte Fuel Cells".
- 2012 Outstanding graduation thesis, Tsinghua University, China
for my bachelor thesis entitled "Decomposition of heat generation in automotive batteries".

Peer recognition

- 2025 Dream Chemistry Lecture, Institute of Physical Chemistry (IChF), Poland
The series aims to bring to the Institute (IChF) excellent science carried out by promising researchers at an early career stage
- 2024 ECS-IOP Trusted Reviewer
In recognition of an exceptionally high level of peer review competency
- 2023 Plenary speaker, 12th International Symposium on Electrochemical Impedance Spectroscopy, July 2 to 7, 2023, Beijing, China.
- 2023, 2022 Invited Speaker, Guo Yong Huai (郭永怀) Lecture Series, School of Chemistry and Chemical Engineering, University of Science and Technology of China (USTC)
Guo Yong Huai Lecture Series are one of the most prestigious lecture series organized by USTC, one of China's leading institutions in science and technology.
- 2022 Inaugural speaker, Electrochimica Acta Seminar Series
For the paper "The rate-determining term of electrocatalytic reactions with first-order kinetics", selected by the editorial board of Electrochimica Acta.

Teaching

Since 2022, I teach the course "Interface Theory and Computational Electrocatalysis" for international master students at RWTH Aachen University, 16 lectures, ~100 students.

Since 2018, I have been invited by Prof. Yanxia Chen to teach a short course on fundamental electrochemistry to graduate students at University of Science and Technology of China. The lectures in the 2023 are :

[Lecture one](#): An introduction to metal electronic structure[OL]. (2023-12-11)

[Lecture two](#): Peeking into Electrical Double layer at the mesoscale (1-100 nm)[OL]. (2023-12-15).

[Lecture three](#): Thought experiments on a fuel cell[OL]. (2023-12-18).

[Lecture four](#): Model Hamiltonian Approach to Understand pH effects on hydrogen reactions[OL]. (2023-12-22).

Since 2021, I have been invited to give lectures to the **Summer School of Electrochemistry, Xiamen University**, ~400 students.

2024, [Electrical Double Layer on the Mesoscale](#).

2021-2023, [Electrochemical Impedance Spectroscopy \(online\)](#)

2023, *A Short Course on Electrical Double Layer*, School of Environment, Harbin Institute of Technology (HIT), China.

[Lecture one](#): The Electrical Double layer at Platinum An odyssey from ionomer-free fuel cell electrodes to single crystals[OL]. (2023-12-12).

[Lecture two](#): Electrical Double Layer at Graphite and beyond[OL]. (2023-12-19).

Lecture three: Electrical Double Layer Effects on Oxygen Reduction.

2018, *Engineering Thermodynamics*, Central South University, second-year university students, ~80 students.

2017-2019, *Computer Applications in Chemical Engineering*, Central South University, second-year university students, ~50 students.

Supervision

Current group members

Postdoc: Dr. Weiqiang Tang

PhD students: Octavius Schmidt (2025), Qiuhan Deng (2025), Lulu Zhang (2024), Chenkun Li (2023), Zengming Zhang (2022)

Master students: Zixi Liang (2024), Xiwei Wang (2025)

Visiting Ph.D. students in my group

2025: Da Zhu, Tsinghua University, three months

2024: Ling Xu, Tsinghua University, three months

2024: Mengke Zhang, USTC, one year

2023: Haosen Xu, Tsinghua University, one year

Past group members at Central South University, China

Master students: Xinwei Zhu, Zengming Zhang, Chenkun Li, Ying Sun

Bachelor students: Yufan Zhang, Lulu Zhang, Chenkun Li, Jinwen Liu

Professional services

2024-, Editorial Board Member, Current Opinion in Electrochemistry

2021, Guest editor, the 2022 session of surface electrochemistry in Current Opinion in Electrochemistry, see the editorial: <https://doi.org/10.1016/j.coelec.2022.101099>

2020-, Early-Career Editor, Journal of Electrochemistry, Chinese Society of Electrochemistry

2018, Guest editor, the 2019 session of electrocatalysis in Current Opinion in Electrochemistry, see the editorial: <https://doi.org/10.1016/j.coelec.2019.03.009>

I organized a Sino-German workshop on fuel cells and electrolysis, 8th December, 2023, Julich, Germany.

I chaired the third Asian Symposium on Electrochemical Impedance Spectroscopy, 15-17 November 2019, Changsha, China, with around 200 participants from China and Japan, see the conference website: <https://aeis2019.wixsite.com/changsha>

I regularly review for following journals: Nature Catalysis, Nature Communications, Energy & Environmental Science, Physical Review Letters, Journal of American Chemical Society; PRX Energy, Journal of The Electrochemical Society, ChemSusChem, Journal of Physical Chemistry, Journal of Power Sources, Electrochimica Acta, Energy, Journal of Electroanalytical Chemistry, Electrocatalysis

Talks (selected)

Apr. 2025, Invited to the series of Dream Chemistry Lectures, Institute of Physical Chemistry, Warsaw, Poland

Nov. 2024, Keynote, 22nd National Conference of Electrochemistry, Haikou, China

Sep. 2024, Invited seminar talk, Fritz-Haber-Institut - Max-Planck-Gesellschaft (Hosted by Dr. Hendrik Heenen)

2023, Plenary speaker, 12th International Symposium on Electrochemical Impedance Spectroscopy, Beijing, China.

2023, Invited seminar talk, Technical University of Munich (Hosted by Prof. K. Krischer)

2023, 2022, Guo Yong Huai (郭永怀) Lecture, School of Chemistry and Chemical Engineering, University of Science and Technology of China

2021, Invited speaker, 748th WE-Heraeus-Seminar on “Nanoscale Physics of Electrochemical and Biological Media”, Berlin

2021, Invited speaker, HITEC Day on Electrocatalysis, Forschungszentrum Jülich

2020, Invited speaker, 32th National Conference on Chemistry, China

2019, Invited speaker, 20th National Conference on Electrochemistry, China

2018, Oral presentation, International Symposium on Electrocatalysis, 2018, Poland

2017, Invited speaker, 2nd Asian Symposium on Electrochemical Impedance Spectroscopy, Japan

Membership

2022-now, member, German Physical Society

2017-now, member, International Society of Electrochemistry

2017-now, member, Scientific committee, Asian Symposium on Electrochemical Impedance Spectroscopy